

What is claimed is:

1        1.        A method for measuring effectiveness of advertisements displayed on a  
2 shopping cart, wherein said method comprises:

3            a)       displaying at least one advertisement on said shopping cart;  
4            b)       generating advertisement history data representing each of said at  
5 least one advertisement;

6            c)       generating a code representing at least one item purchased by a  
7 shopper using said shopping cart;

8            d)       comparing each said code representing at least one item with said  
9 advertisement history data to determine whether an item advertised in said at  
10 least one advertisement is purchased by said shopper using said shopping cart;  
11 and

12           e)       generating usage data representing each display of an  
13 advertisement for an item purchased by said shopper using said shopping cart.

1        2.        The method of claim 1, wherein

2            step a) includes displaying images generated from an electrical signal on a  
3 display screen, and

4            step b) includes storing a code representing each of said at least one  
5 advertisement in an advertisement history data structure.

1        3.        The method of claim 1, wherein

2            step a) includes holding at least one advertising placard within a display  
3 unit, and

4            step b) includes generating an electrical signal in accordance with settings  
5 of electrical contacts operated according to a pattern of a surface of said at least  
6 one advertising placard held within said display unit.

1       4.     The method of claim 1, wherein  
2             step c) includes reading a machine readable element identifying said at  
3     least one item with a sensing device at a point-of-sale terminal, and  
4             said method additionally comprises transmitting said advertisement history  
5     data to said point-of sale terminal from said shopping cart adjacent said point-of-  
6     sale terminal.

1       5.     The method of claim 4, wherein  
2             said method additionally comprises transmitting said code representing  
3     said at least one item and said advertisement history data to a store computer  
4     system from said point of sale terminal, and  
5             steps d) and e) are performed according to instructions executing within  
6     said store computer system.

1       6.     The method of claim 4, wherein  
2             step a) occurs during a period of use of said shopping cart by said  
3     shopper,  
4             a beginning of said period of use is determined by sensing movement of  
5     said shopping cart, and  
6             an end of said period of use is determined by transmitting said  
7     advertisement history data to said point-of-sale terminal.

1       7.     The method of claim 4, wherein  
2             step a) occurs during a period of use of said shopping cart by said  
3     shopper,  
4             a beginning of said period of use is determined by sensing manual  
5     operation of a switch, and  
6             an end of said period of use is determined by transmitting said  
7     advertisement history data to said point-of-sale terminal.

1       8.     The method of claim 1, wherein  
2             step c) includes reading a machine readable element identifying said at  
3     least one item with a sensing device attached to said shopping cart,  
4             said method additionally comprises transmitting said code representing  
5     said at least one item and said advertisement history data to a store computer  
6     system from said shopping cart, and  
7             steps d) and e) are performed according to instructions executing within  
8     said store computer system.

1       9.     The method of claim 8, wherein  
2             said shopping cart additionally includes a receipt printer,  
3             step a) occurs during a period of use of said shopping cart by said  
4     shopper with said sensing device,  
5             said period of use begins with reading said machine readable element of a  
6     first item;  
7             said period of use ends with printing a receipt within said receipt printer.

1       10.    The method of claim 1, wherein  
2             step d) includes comparing a code representing at least one item with a  
3     data record representing at least one advertisement, and  
4             said data record includes at least one code representing an item  
5     advertised in said advertisement represented by said data record.

1       11.    The method of claim 10, wherein  
2             said data record is generated within said shopping cart and transmitted to  
3     a store computer system; and  
4             steps d) and e) are performed according to instructions executing within  
5     said store computer system.

1       12.    The method of claim 10, wherein  
2            said advertisement history data is generated within said shopping cart and  
3       transmitted to a store computer system,  
4            said data record is generated within said store computer system by  
5       comparing said advertisement history data with an advertisement data structure  
6       including codes representing items advertised by a plurality of advertisements.

1       13.    The method of claim 1, wherein step d) includes  
2            determining a name associated with a code representing an item from an  
3       item data structure relating codes representing items with names associated with  
4       said items; and  
5            comparing said name associated with said code with a data record  
6       representing an advertisement displayed on said shipping cart, wherein said data  
7       record includes a name advertised in said advertisement represented by said  
8       data record.

1       14.    The method of claim 13, wherein  
2            said data record is generated within said shopping cart and transmitted to  
3       a store computer system; and  
4            steps d) and e) are performed according to instructions executing within  
5       said store computer system.

1       15.    The method of claim 13, wherein  
2            said advertisement history data is generated within said shopping cart and  
3       transmitted to a store computer system,  
4            said data record is generated within said store computer system, and  
5            steps d) and e) are performed according to instructions executing within  
6       said store computer system.

1 16. The method of claim 1, additionally comprising determining a plurality of  
2 amounts of money owed by a plurality of advertisers by applying an algorithm to  
3 said usage data.

1 17. The method of claim 1, wherein  
2 step a) is controlled by executing instructions in a store computer system  
3 according to data transmitted from said store computing system to said shopping  
4 cart, and  
5 said advertisement history data is generated and stored within said store  
6 computer system.

1 18. The method of claim 17, wherein  
2 step c) includes reading a machine readable element identifying said at  
3 least one item with a sensing device at a point-of-sale terminal,  
4 said method additionally comprises transmitting said code representing at  
5 least one item purchased by a shopper using said shopping cart from said point-  
6 of-sale terminal to said store computer system, and  
7 steps d) and e) are performed according to instructions executing within  
8 said store computer system.

1 19. The method of claim 17, wherein  
2 step c) includes reading a machine readable element identifying said at  
3 least one item with a sensing device attached to said shopping cart,  
4 said method additionally comprises transmitting said code representing  
5 said at least one item to said store computer system from said shopping cart, and  
6 steps d) and e) are performed according to instructions executing within  
7 said store computer system.

1        20.    A system for displaying advertisements and for determining effectiveness  
2        of said advertisements, wherein said system comprises:

3            at least one shopping cart including a display unit for displaying  
4        advertisements, means for generating and storing advertisement history data  
5        representing advertisements displayed within said display unit, and a transmitter  
6        for transmitting said advertising history data;

7            at least one sensing device for generating item codes representing items  
8        having machine readable elements identifying said items; and

9            a store computer system including an item data structure storing codes  
10       representing a plurality of items, an advertisement data structure storing data  
11       representing advertisements, communication means for receiving said item  
12       codes and said advertisement history data, and a processor programmed to  
13       compare said item codes with said advertisement history data to determine  
14       whether an item advertised in an advertisement displayed in said at least one  
15       shopping cart has been purchased by said shopper, and to generate usage data  
16       representing each display of an advertisement for an item purchased by said  
17       shopper using said shopping cart.

1        21.    The system of claim 20, additionally comprising at least one point-of-sale  
2        terminal and a communication channel extending between each said at least one  
3        point-of-sale terminal and said store computer system, wherein

4            each said sensing device is located at a point-of-sale terminal,  
5            said transmitter transmits said advertisement history data to said point-of-  
6        sale terminal, and

7            each said at least one point-of-sale terminal transmits said advertisement  
8        history data and said item codes to said store computer system over said  
9        communication channel.

1        22.    The system of claim 20, wherein  
2                each of said transmitters is a portion of a transceiver,  
3                each of said at least one point-of-sale terminals transmits a beacon signal,  
4        and  
5                said transmitter transmits said advertisement history data to said point-of-  
6        sale terminal upon receiving said beacon signal at said transceiver.

1        23.    The system of claim 20, wherein  
2                each said sensing device is located in one of said at least one shopping  
3        cart, and  
4                said transmitter transmits said advertisement data history and said idem  
5        codes to said store computer system.

1        24.    The system of claim 20, wherein  
2                said display unit includes a display screen displaying images generated  
3        from an electronic signal, and  
4                said shopping cart includes storage including an advertisement history  
5        data structure holding said advertising history data.

1        25.    The system of claim 20, wherein  
2                said display unit comprises at least one slot for holding a placard having  
3        printed advertisement data and a plurality of switches activated by a element of  
4        surface structures on said placard, and  
5                said advertisement history data is generated from outputs of said plurality  
6        of switches.

1 26. A system for displaying advertisements and for determining effectiveness  
2 of said advertisements, wherein said system comprises:

3 at least one shopping cart including a display unit for displaying  
4 advertisements and a receiver for receiving data causing said advertisements to  
5 be displayed;

6 at least one sensing device for generating item codes representing items  
7 having machine readable elements identifying said items; and

8 a store computer system including an item data structure storing codes  
9 representing a plurality of items, an advertisement data structure storing data  
10 representing advertisements, communication means for receiving said item  
11 codes and for transmitting said data causing said advertisements to be displayed  
12 in said display unit of each of said at least one shopping cart, a transaction data  
13 structure storing advertisement history data representing advertisements  
14 displayed within said display unit of each of said at least one shopping cart, and  
15 a processor programmed to generate said data causing said advertisements to  
16 be displayed in said display unit of each of said at least one shopping cart, to  
17 compare said item codes with said advertisement history data to determine  
18 whether an item advertised in an advertisement displayed in said at least one  
19 shopping cart has been purchased by said shopper, and to generate usage data  
20 representing each display of an advertisement for an item purchased by said  
21 shopper using said shopping cart.

1 27. The system of claim 26, additionally comprising at least one point-of-sale  
2 terminal and a communication channel extending between each said at least one  
3 point-of-sale terminal and said store computer system, wherein each said  
4 sensing device is located at a point-of-sale terminal transmitting said item codes  
5 to said store computer system.



1        28.    The system of claim 26, wherein  
2                each said sensing device is located in one of said at least one shopping  
3        cart, and  
4                each said shopping cart transmits said item codes to said store computer  
5        system.

1        29.    A method for displaying a plurality of advertisements within a shopping  
2        cart having a display screen and a microprocessor and for transmitting data  
3        indicating which advertisements have been displayed, wherein said method  
4        comprises

- 5                a)        determining that a period of use of said shopping cart has begun;
- 6                b)        displaying a series of advertisements within said plurality of  
7        advertisements on said display screen;
- 8                c)        for each of said advertisements displayed, recording data  
9        identifying said advertisement in an advertisement history data structure;
- 10              d)        transmitting data from said advertisement history data file;
- 11              e)        determining that said period of use of said shopping cart has  
12        ended; and
- 13              f)        stopping a display of said series of advertisements.

1        30,    The method of claim 29, wherein  
2                step a) includes determining that said shopping cart has been moved, and  
3                a determination that said period of use of said shopping cart has ended is  
4        made in response to determining that a predetermined period of time has passed  
5        since a last movement of said shopping cart.

1        31.    The method of claim 29, wherein  
2                step a) includes determining that a switch on said shopping cart has been  
3 manually operated, and  
4                a determination that said period of use of said shopping cart has ended is  
5 made in response to determining that a predetermined period of time has passed  
6 since a last movement of said shopping cart.

1        32.    The method of claim 29, additionally comprising determining that said  
2 shopping cart has been moved into proximity with a point-of-sale terminal,  
3 wherein, in response to determining that said shopping cart has been moved into  
4 proximity with a point-of-sale terminal, said data from said advertisement history  
5 file is transmitted to said point-of-sale terminal in step d); and a determination  
6 that said period of use of said shopping cart has ended is made in step e).

1        33.    The method of claim 29, wherein  
2                step a) includes determining that a machine readable element identifying a  
3 first item has been read by a sensing device within said shopping cart, and  
4                a determination that said period of time of said shopping cart use is made  
5 in step e) in response to a determination that a sales receipt is being printed by a  
6 receipt printer within said shopping cart.

1        34.    The method of claim 29, wherein said data from said advertisement  
2 history file is transmitted in response to determining that a machine readable  
3 element identifying a first item has been read by a sensing device within said  
4 shopping cart.

1 35. A method performed within a computer system for determining how often  
2 advertisements are displayed in shopping carts used to purchase items  
3 advertised in said advertisements, wherein said method comprises:

- 4 a) receiving a code describing an item to be purchased;  
5 b) determining that said item described by said code is advertised  
6 within an advertisement described by advertisement history data describing at  
7 least one advertisement displayed in a shopping cart; and  
8 c) generating usage data indicating a display of said advertisement  
9 described by said advertising history data in a shopping cart used to purchased  
10 an item advertised within said advertisement.

1 36. The method of claim 35, wherein  
2 said method additionally comprises receiving said advertisement history  
3 data in a first transmission from a point-of-sale terminal, and  
4 said code is received in a transmission from said point-of-sale terminal  
5 following said first transmission.

1 37. The method of claim 35, wherein said code and said advertising history  
2 data are received together in a transmission from a shopping cart.

1 38. The method of claim 35, wherein step c) includes comparing said code  
2 with at least one code for an advertised item contained within said advertisement  
3 history data received in step b).

1 39. The method of claim 35, wherein step c) includes:  
2 reading an advertisement data record from an advertisement data  
3 structure stored within said computer system for an advertisement described in  
4 said advertisement history data received in step b); and  
5 comparing said code with one or more codes for advertised items  
6 contained within said advertisement data record.

1        40.    The method of claim 35, wherein step c) includes:

2            reading an advertisement data record from an advertisement data  
3        structure stored within said computer system for an advertisement described in  
4        said advertisement history data received in step b);

5            reading an item data record from an item data structure stored within said  
6        computer system for an item identified by said code received in step a); and

7            comparing an advertised name read from said advertisement data record  
8        with a name associated with said item read from said item data record.

1        41.    The method of claim 35, additionally comprising determining a plurality of  
2        amounts of money owed by a plurality of advertisers by applying an algorithm to  
3        said usage data.

1        42.    The method of claim 35, additionally comprising

2            transmitting a code causing an advertisement to be displayed on said  
3        shopping cart, and

4            generating said advertising history data.

1        43.    A computer readable medium having computer executable code causing a  
2        shopping cart having a display screen and a microprocessor to perform a method  
3        for displaying a plurality of advertisements within said shopping cart and for  
4        transmitting data indicating which advertisements have been displayed, wherein  
5        said method comprises

6            a)     determining that a period of use of said shopping cart has begun;

7            b)     displaying a series of advertisements within said plurality of  
8        advertisements on said display screen;

9            c)     for each of said advertisements displayed, recording data  
10        identifying said advertisement in an advertisement history data structure;

11          d)     transmitting data from said advertisement history data file;

- 12           e)     determining that said period of use of said shopping cart has  
13 ended; and  
14           f)     stopping a display of said series of advertisements.

1     44.    The computer readable medium of claim 43, wherein, within said method,  
2           step a) includes determining that said shopping cart has been moved, and  
3           a determination that said period of use of said shopping cart has ended is  
4     made in response to determining that a predetermined period of time has passed  
5     since a last movement of said shopping cart.

1     45.    The computer readable medium of claim 43, wherein  
2           said method additionally comprises determining that said shopping cart  
3     has been moved into proximity with a point-of-sale terminal, and,  
4           within said method, in response to determining that said shopping cart has  
5     been moved into proximity with a point-of-sale terminal, said data from said  
6     advertisement history file is transmitted to said point-of-sale terminal in step d);  
7     and a determination that said period of use of said shopping cart has ended is  
8     made in step e).

1     46.    The computer readable medium of claim 43, wherein, within said method,  
2           step a) includes determining that a first item has been scanned by a  
3     barcode reader within said shopping cart, and  
4           a determination that said period of time of said shopping cart use is made  
5     in step e) in response to a determination that a sales receipt is being printed by a  
6     receipt printer within said shopping cart.

1     47.    The computer readable medium of claim 43, wherein, within said method,  
2     said data from said advertisement history file is transmitted in response to  
3     determining that an item has been scanned by a barcode reader within said  
4     shopping cart.

1 48. A computer readable medium having computer executable code causing a  
2 computer system to perform a method for determining how often advertisements  
3 are displayed in shopping carts used to purchase items advertised in said  
4 advertisements, wherein said method comprises:

- 5 a) receiving a code describing an item to be purchased;  
6 b) determining that said item described by said code is advertised  
7 within an advertisement described by advertisement history data describing at  
8 least one advertisement displayed in a shopping cart; and  
9 c) generating usage data indicating a display of said advertisement  
10 described by said advertising history data in a shopping cart used to purchased  
11 an item advertised within said advertisement.

1 49. The computer readable medium of claim 48, wherein  
2 said method additionally comprises receiving said advertisement history  
3 data in a first transmission from a point-of-sale terminal, and  
4 within said method, said code is received in a transmission from said  
5 point-of-sale terminal following said first transmission.

1 50. The computer readable medium of claim 48, wherein, within said method,  
2 said code and said advertising history data are received together in a  
3 transmission from a shopping cart.

1 51. The computer readable medium of claim 48, wherein, within said method,  
2 step c) includes comparing said code with at least one code for an advertised  
3 item contained within said advertisement history data received in step b).

1       52.    The computer readable medium of claim 48, wherein, within said method,  
2       step c) includes:

3           reading an advertisement data record from an advertisement data  
4       structure stored within said computer system for an advertisement described in  
5       said advertisement history data received in step b); and

6           comparing said code with one or more codes for advertised items  
7       contained within said advertisement data record.

1       53.    The computer readable medium of claim 48, wherein, within said method,  
2       step c) includes:

3           reading an advertisement data record from an advertisement data  
4       structure stored within said computer system for an advertisement described in  
5       said advertisement history data received in step b);

6           reading an item data record from an item data structure stored within said  
7       computer system for an item identified by said code received in step a); and

8           comparing an advertised name read from said advertisement data record  
9       with a name associated with said item read from said item data record.

1       54.    The computer readable medium of claim 48, wherein said method  
2       additionally comprises determining a plurality of amounts of money owed by a  
3       plurality of advertisers by applying an algorithm to said usage data.

1       55.    The computer readable medium of claim 48, wherein said method  
2       additionally comprises:

3           transmitting a code causing an advertisement to be displayed on said  
4       shopping cart; and

5           generating said advertising history data.

1 56. A computer data signal embodied in a carrier wave including computer  
2 executable code causing a shopping cart having a display screen and a  
3 microprocessor to perform a method for displaying a plurality of advertisements  
4 within said shopping cart and for transmitting data indicating which  
5 advertisements have been displayed, wherein said method comprises

- 6 a) determining that a period of use of said shopping cart has begun;
- 7 b) displaying a series of advertisements within said plurality of
- 8 advertisements on said display screen;
- 9 c) for each of said advertisements displayed, recording data
- 10 identifying said advertisement in an advertisement history data structure;
- 11 d) transmitting data from said advertisement history data file;
- 12 e) determining that said period of use of said shopping cart has
- 13 ended; and
- 14 f) stopping a display of said series of advertisements.

1 57. The computer data signal of claim 56, wherein, within said method,  
2 step a) includes determining that said shopping cart has been moved, and  
3 a determination that said period of use of said shopping cart has ended is  
4 made in response to determining that a predetermined period of time has passed  
5 since a last movement of said shopping cart.

1 58. The computer data signal of claim 56, wherein  
2 said method additionally comprises determining that said shopping cart  
3 has been moved into proximity with a point-of-sale terminal, and,  
4 within said method, in response to determining that said shopping cart has  
5 been moved into proximity with a point-of-sale terminal, said data from said  
6 advertisement history file is transmitted to said point-of-sale terminal in step d);  
7 and a determination that said period of use of said shopping cart has ended is  
8 made in step e).



1 59. The computer data signal of claim 56, wherein, within said method,  
2 step a) includes determining that a first item has been scanned by a  
3 barcode reader within said shopping cart, and  
4 a determination that said period of time of said shopping cart use is made  
5 in step e) in response to a determination that a sales receipt is being printed by a  
6 receipt printer within said shopping cart.

1 60. The computer data signal of claim 56, wherein, within said method, said  
2 data from said advertisement history file is transmitted in response to determining  
3 that an item has been scanned by a barcode reader within said shopping cart.

1 61. A computer data signal embodied in a carrier wave including computer  
2 executable code causing a computer system to perform a method for determining  
3 how often advertisements are displayed in shopping carts used to purchase  
4 items advertised in said advertisements, wherein said method comprises:

- 5 a) receiving a code describing an item to be purchased;  
6 b) determining that said item described by said code is advertised  
7 within an advertisement described by advertisement history data describing at  
8 least one advertisement displayed in a shopping cart; and  
9 c) generating usage data indicating a display of said advertisement  
10 described by said advertising history data in a shopping cart used to purchased  
11 an item advertised within said advertisement.

1 62. The computer data signal of claim 45, wherein  
2 said method additionally comprises receiving said advertisement history  
3 data in a first transmission from a point-of-sale terminal, and  
4 within said method, said code is received in a transmission from said  
5 point-of-sale terminal following said first transmission.

1 63. The computer data signal of claim 61, wherein, within said method, said  
2 code and said advertising history data are received together in a transmission  
3 from a shopping cart.

1 64. The computer data signal of claim 61, wherein, within said method, step c)  
2 includes comparing said code with at least one code for an advertised item  
3 contained within said advertisement history data received in step b).

1 65. The computer data signal of claim 61, wherein, within said method, step c)  
2 includes:

3 reading an advertisement data record from an advertisement data  
4 structure stored within said computer system for an advertisement described in  
5 said advertisement history data received in step b); and

6 comparing said code with one or more codes for advertised items  
7 contained within said advertisement data record.

1 66. The computer data signal of claim 61, wherein, within said method, step c)  
2 includes:

3 reading an advertisement data record from an advertisement data  
4 structure stored within said computer system for an advertisement described in  
5 said advertisement history data received in step b);

6 reading an item data record from an item data structure stored within said  
7 computer system for an item identified by said code received in step a); and

8 comparing an advertised name read from said advertisement data record  
9 with a name associated with said item read from said item data record.

1 67. The computer data signal of claim 61, wherein said method additionally  
2 comprises determining a plurality of amounts of money owed by a plurality of  
3 advertisers by applying an algorithm to said usage data.

1     68.    The computer data signal of claim 61, wherein said method additionally  
2     comprises:  
3           transmitting a code causing an advertisement to be displayed on said  
4     shopping cart; and  
5           generating said advertising history data.